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ABSTRACT

This project was designed to answer the following questions: Is it possible for secondary schcol office education students to develop an entry level shorthand skill of 90 words per minute with one year of instruction? Is the current dominant system the most effective to use to obtain entry level skill in one year? Is there one system more effective than others for low ability students? At what speeds are students able to transcribe dictation with 97% accuracy in each of the four shorthand systems at the end of two semesters? Two symbol systems (Gregg and Century 21) and two alphabetic systems (Landmark and Forkner) were selected. Subjects were first-semester shorthand students in sixteen high schools in Los Angeles County. Shorthand teachers received inservice education to insure the use of appropriate methods. Results follow: (1) An insignificant number of students in any of the systems was able to take shorthand at 90 words per minute. (2) Since none of the systems enabled students to obtain an entry level skill, a dominant system could not be determined. (3) There is sufficient evidence to support the statement that, for the students in the study, the Forkner system allows low ability students to perform at a higher level than the other three systems. (4) Transcription speeds of students in the study were highest using Century 21 and Forkner. (SH)

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FINAL REPORT

SHORTHAND RESEARCH PROJECT

MARCH, 1977

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SHORTHAND RESEARCH PROJECT

THE PROBLEM

For many years there has been one symbol system of shorthand in use in the majority of office education training programs in public schools in California. Traditionally, these programs require two years of training in order for the students to develop job entry skills in shorthand. Since there are many skills necessary for employment in clerical jobs, it would be an advantage to students to have access to a system of shorthand which can be mastered in one or two semesters rather than the traditional two-year program. This would enable students to spend additional time in acquiring other skills necessary for employment without having to lengthen the amount of time necessary to develop entry level skills.

Another problem with existing shorthand programs is the high dropout rate. Students leave shorthand programs for many reasons: moving out of the area, lack of interest, program conflicts, personal problems, too difficult, etc. Admittedly, many of these reasons bear little relationship to the shorthand system. However, it might be possible to find a system in which low ability students would have less difficulty. Theoretically, a system that lower ability students can learn successfully should have a significantly lower dropout rate than the current dominant system.

STATEMENT OF THE PROBLEM

This project was designed to answer the following questions:

1. Is it possible for secondary school office education students to develop an entry level shorthand skill of 90 words per minute with one year of instruction?

2. Is the current dominant system the most effective to use to obtain entry level skill in one year or are there alternatives?

3. Is there one system more effective than others for low ability students?

4. At what speeds are students able to transcribe dictation with 97 percent accuracy in each of the four shorthand systems at the end of two semesters?

PROCEDURES

Selection of the Shorthand Systems:

The project proposed to identify four shorthand systems, two symbol and two alphabetic, to use in the study. The two symbol systems selected for the study were Gregg Shorthand and Century 21 Shorthand. Gregg was selected because it is the system most often in use in California public schools. Century 21 was selected because it is a relatively new system incorporating single-direction symbols, dominant-direction writing, and consistent joining patterns. These features should facilitate the mastery of a shorthand system.

The two alphabetic systems selected were Landmark and Forkner. Both of these alphabetic systems use symbols for high-frequency speech sounds and syllables that are difficult to write using alphabetic characters. They are both phonetic shorthand systems. The use of symbols for high-frequency speech sounds should enable students to deliver high writing speeds. Both systems enable students to be combined with students who have learned Gregg for advanced shorthand practice. Both systems are used widely in other sections of the United States and Canada.

Selection of the Sample:

The population for this study was made up of first-semester shorthand classes from various districts located within Los Angeles County. All students included in the study had no previous shorthand instruction. Since participation in the study required a school to change the shorthand system it was offering to students, it was not possible to select the sample randomly. In July, 1975, a letter was sent to Curriculum Directors and Vocational Education Directors in the unified and union high school districts in Los Angeles County inviting their participation in the project. (See Appendix A-1) It was stipulated that any school who wished to participate would only be allowed to do so if the shorthand teacher was willing. Every school who indicated a desire to participate was included in the study. If there was only one shorthand class on campus, it automatically became the class in the study. If there was more than one class, the class used in the study was selected randomly. Since there were only two boys in the whole population of the study, they were eliminated from the data. The population used in the reported results was made up entirely of females.

The participating districts, schools, and the shorthand system selected by each of the schools are listed below:

High School	School District	Shorthand System
Mark Keppel	Alhambra City	Gregg
San Gabriel	Alhambra City	Landmark
		Gregg
Gladstone	Azusa Unified	Century 21
Bellflower	Bellflower Unified	Gregg
El Monte	El Monte Union High	Forkner
El Rancho	El Rancho Unified	Landmark
Morningside	Inglewood Unified	Forkner
Lakewood	Long Beach Unified	Century 21

High School	School District	Shorthand System
Roosevelt	Los Angeles Unified	Forkner
La Mirada	Norwalk-La Mirada Unified	Gregg
Norwalk	Norwalk-La Mirada Unified	Landmark
Rowland	Rowland Unified	Gregg
Aviation	South Bay Union High	Century 21
Mira Costa	South Bay Union High	Forkner
Redondo Union	South Bay Union High	Century 21
Edgewood	West Covina Unified	Century 21

In all districts in the study, shorthand is an elective class for which there are no prerequisites except the ability to type. At least half of the schools in the study do not even list typing as a prerequisite.

The number of students originally enrolled in each shorthand system and the number of teachers in each system is listed below:

Shorthand System	Number of Teachers	Number of Students
Century 21	5	148
Forkner	4	119
Gregg	5	153
Landmark	3	133
	17	553

Inservice for Participating Teachers:

Inservice programs for teachers were designed and implemented throughout the year. All workshops were conducted by people considered to be experts in their particular shorthand system by the publishing company that produced the shorthand system.

An additional round of workshops was held in each shorthand system to instruct teachers in the theory of the system and appropriate methods to be used in teaching the system. The workshops were held during the last week of July through the third day of September. Since the Gregg Shorthand teachers were all experienced teachers who had been teaching Gregg for several years, their initial inservice program was seven hours long and concentrated on appropriate methods for teaching theory. Teachers using the other three shorthand systems had to learn the theory of their particular system since they had all been using the Gregg System in their classrooms prior to the start of the project. Teachers using the Century 21 System had 12 hours of instruction in theory early in July and an additional seven hours in late July on appropriate methods for teaching theory. Teachers in the Forkner System received 16 hours of inservice. Landmark teachers received 15 hours of inservice. In both alphabetic systems, teachers started by learning the theory of the system and then learning appropriate methods for teaching the theory to students.

The second round of inservice programs was held in October for each of the shorthand systems. They were two hours long and were designed to reinforce recommended methods for teaching theory and initial speed building activities for dictation and transcription.

The third and final round of inservice programs was held in February and each program was two hours long. The major emphasis of these programs was on appropriate methods for teaching transcription and speed building.

Instructions to Teachers:

Textbooks for the Forkner, Landmark, and Century 21 Systems were purchased and delivered to the schools prior to the first day of classes. No books were purchased for the Gregg teachers since they were already using appropriate materials. Some additional dictating materials, dictionaries, and student guides were purchased for each of the four groups.

Each teacher was given a set of basic instructions to follow while teaching the experimental class. The instructions were the same for each shorthand system. (See Appexdix A-2) There are many contrasting beliefs about the most effective teaching methodology to be used in the classroom. The instructions given to the teachers were consistent with the beliefs of several noted shorthand experts and available research studies.

Testing Procedures:

High ability in shorthand is closely related to good English usage skills. According to several research studies, one of the most useful predictors of shorthand achievement is correct spelling. For this reason, students were given the Essentials of English Test (See Appendix A-3) between the tenth and fifteenth day of instruction. This test was used as a measure of student ability. An item analysis of each class in the study was done. This analysis was sent to each teacher in the experiment to be used as a basis for planning remediation activities for the more serious English usage deficiencies of the class.

At the beginning of the second semester, the Gates-Mac Ginitie Reading Test was administered. (See Appendix A-4) This test was also used as a measure of student ability.

In order to determine student progress, dictation tests were administered four times during the second semester. Test #1 was administered between February 25 and March 2, 1976. The test consisted of a theory test of 100 unrelated words. Students were graded on their ability to write the word correctly in their particular shorthand system. The dictation test consisted of letters dictated at speeds of 80, 70, 60, 50, and 40 words per minute for 1-1/2 minutes each starting at the highest speed. (See Appendix A-5)

Test #2 was given between March 21 and April 6, 1976. The dictation

test consisted of letters dictated at speeds of 80, 70, 60, 50, and 40 words per minute, two minutes at each speed. (See Apendix A-G)

Test #3 was given between April 29 and May 5, 1976. The dictation test consisted of letters dictated at speeds of 90, 80, 70, 60, and 50 words per minute for three minutes at each speed. (See Appendix A-7)

Test #4 was given during the first week of June. This test was structured somewhat differently from the preceding tests. (See Appendix A-8) In tests 1 - 3, students were told to transcribe the letter they believed they were able to take most correctly. Teachers were told to encourage students to transcribe the letter dictated at the highest possible speed for them. Test #1 was administered in two days - one for the theory test, one for the dictation test. Tests #2 and 3 were each administered in one day. Test #4 was administered over a period of four days. Dictation was given for three minutes at speeds of 60, 70, 80, and 90 words per minute. Each letter was preceded by a three-minute practice letter at a speed of ten words per minute faster than the actual test. The 60 word per minute dictation was given on the first day, the 70 on the second, etc.

Test #4 was administered differently for two reasons: (1) To measure student accuracy, it was necessary to have a score from each student on the same test; and, (2) several teachers indicated that students who had to start out on the high speed dictation at 80 and 90 words per minute were too tired to do well at the lower speeds of 60 or 70 words per minute. This caused them to be unable to transcribe because they would miss out on both the high and low speeds. The higher speeds were beyond their ability, the lower speeds were beyond their endurance.

Test materials for all four tests consisted of letters from sources to which the teachers in the experiment did not have access. Materials from each of the four publishing companies were utilized. Half of the material came from old published materials which had been out of print long enough to make it highly unlikely that students or teachers had seen it before. The other half came from materials not yet published. The theory test was made up of words which were covered in theory presentations in each of the four systems during the first semester of instruction.

The dictation tests were prerecorded on a master tape in the Los Angeles County Office. Copies were then made of the master tape and distributed to the teachers in the project. This was done to insure that every single student in the experiment heard exactly the same dictation. Three different dictators were used--one man and two women.

Classification of Dropouts and Makeup of Final Sample:

Students who dropped within the first four weeks of school were not considered in reporting dropouts. Students who dropped during this period generally did so because they had been misprogrammed. Discounting these early removals from the programs, the enrollment in the four shorthand systems was:

Shorthand System	Number of Students
Century 21	161
Forkner	96
Gregg	153
Landmark	130

When a student dropped, a teacher was requested to have an interview with the student and determine why. The following reasons were given:

Reason	Number of Students Who Dropped In Century 21	Forkner	Gregg	Landmark
1. Program Conflict	7	10	1	17
2. Too difficult	12	9	14	15
3. Moved Out of Area	3	2	1	2
4. Personal Problems	1	2		
5. Lost interest	13	3	5	1
6. Mid-year Graduate	3		8	
7. Excessive Absenteeism	1		7	5
8. Couldn't Spell				1
9. Pregnancy				2
10. Change of Career Objective				1
11. Failed to do Homework			6	
12. Dropped Out of School		1	3	
13. Language Barrier		1	1	
14. Transferred to Continuation School		1		
15. Runaway				1
16. Illness	1		1	
	41	29	47	45

The students who moved from the area and those who had program conflicts were not considered in computing the dropout rate. The reason for this was that the large majority of these students had no control over their removal from the class. The percentage of students who dropped from each program was:

Shorthand System	Percentage of Drops
Century 21	.21
Forkner	.18
Gregg	.29
Landmark	.20

While this figure may not give a completely accurate picture of the dropout rates in the study, it does provide for some basis for comparing the holding power of each of the systems.

The final sample used in the determination of highest shorthand speeds reached by students in the project was:

Shorthand System	Number of Students
Century 21	120
Forkner	67
Gregg	106
Landmark	85

STUDENT TEST SCORES AND TREATMENT OF DATA

Test scores were treated in two ways. Since Test #1 was dictated for only 1-1/2 minutes, these scores were not reported. Test scores for Test #2 at two minutes and Test #3 at three minutes were compiled. Test scores for students in each shorthand system are reported below. Only scores with at least 97 percent accuracy were considered.

TEST #2

	Century 21	% of Sample	Forkner	% of Sample	Gregg	% of Sample	Landmark	% of Sample
80 wpm	3	.02	0	0	1	0	2	.02
70 wpm	11	.09	10	.14	9	.08	11	.12
60 wpm	5	.04	1	.01	1	0	6	.07
50 wpm	29	.24	7	.10	14	.13	15	.17
40 wpm	21	.17	5	.07	15	.14	6	.07

TEST #3

	Century 21	% of Sample	Forkner	% of Sample	Gregg	% of Sample	Landmark	% of Sample
90 wpm	2	.01	0	0	2	.01	1	.01
80 wpm	4	.03	1	.01	5	.04	3	.03
70 wpm	6	.05	6	.08	1	0	8	.09
60 wpm	12	.10	6	.08	8	.07	3	.03
50 wpm	21	.17	6	.08	8	.07	4	.04

Tests #3 and #4 are the only tests dictated for three minutes at each speed. Therefore, any consideration of whether students achieved the project objective of 90 words per minute for three minutes with 97 percent accuracy, must be based on an analysis of these two tests. The highest speed achieved, with 97 percent accuracy, by each student, is listed in the table below. Students with accuracy rates of less than 97 percent were not considered in this table.

STUDENT SCORES ON TESTS #3 AND #4

	Century 21	% of Sample	Forkner	% of Sample	Gregg	% of Sample	Landmark	% of Sample
90 wpm	9	.07	0	0	3	.02	1	.01
80 wpm	5	.04	2	.02	4	.03	8	.09
70 wpm	6	.05	10	.14	7	.06	13	.15
60 wpm	20	.16	12	.17	20	.18	18	.21
50 wpm	18	.15	5	.07	6	.05	1	.01
Total % of Sample		.47		.40		.34		.47

It requires only a brief glance at these test scores to indicate that none of the four systems tested enabled the students in the project to reach the objective of 90 words per minute for three minutes with 97 percent accuracy. The majority of students had scores at 60 and 70 words per minute. The total percent of sample in the table on the preceding page indicates the percent of each sample able to take dictation and transcribe with an accuracy of 97 percent.

In order to determine which system is more effective for low ability students, the test scores for Test #4 were used. Each student took dictation and transcribed at rates of 90, 80, 70, and 60 words per minute. All scores regardless of the percentage of accuracy were used in the analysis. The statistical analysis of the data required both analysis of variance and analysis of covariance. The two independent variables for all analyses were type of program having four levels and ability having two levels. The determination of ability was by way of the Essentials of English Total Score, given at the beginning of the first semester, which was dichotomized at the median for all students.

Dependent variables were transformed to percents representing accuracy of transcription at the following dictation speeds: 60, 70, 80, and 90 words per minute. An additional dependent variable measured a general knowledge of shorthand theory.

The covariate relative to accuracy of transcription was the Vocabulary subscale on the Gates-Mac Ginitie Reading Test given at the beginning of the second semester. This measure was selected based on an analysis of the inter-correlation matrix of accuracy rates and the various subscales of the Gates Test. (See Table 1.)

Tukey's HSD procedure was used following a significant main effect in order to make pairwise comparisons. Tests of simple main effects were also computed following significant interactions.

Analysis of Variance:

A two way analysis of variance was computed for each of the four dictation speeds.

Dictation Speed--60 Words Per Minute

Results of the analysis of variance (see Table 2 and 3) indicated significant main effects relative to method of instruction and ability ($F=7.37$; $p < .01$ and $F=.45$; $P < .05$). Results of Tukey's HSD procedure indicated that students in either the Century 21 or Gregg system had significantly lower mean accuracy rates than students in the Forkner or Landmark method. As expected, students of high ability had significantly higher mean accuracy rates than students of lower ability.

Dictation Speed--70 Words Per Minute

Result of the analysis of variance indicated significant main effects relative to both method of instruction and ability (F=5.20; P .01 and F=38.75; P .01 respectively). However, Tukey's HSD procedure was unable to identify any significant pairwise comparisons (see Table 4 and 5).

Dictation Speed--80 Words Per Minute

Results of the analysis of variance indicated significant main effects relative to both system of shorthand and ability (F=4.71; P .01 and F=47.90; P .01 respectively). The interaction between method and ability was also significant (P .05). Tests of simple main effects indicated that significant differences existed between the means of the high and low groups for all systems except the Forkner system with the high ability student receiving higher mean accuracy rates than the low ability student. Additional comparisons indicated that for low ability students, the Forkner system produced significantly higher accuracy rates than either the Century 21 or Gregg system No significant difference existed between the Forkner and Landmark systems. For high ability students, the Landmark system produced significantly higher mean accuracy rates than either the Century 21 or Gregg system. No difference was found to exist between the Landmark and Forkner systems.

Dictation Speed--90 Words Per Minute

Result of the analysis of variance indicated significant main effects relative to both method of instruction and ability (F=3.19; P .05 and F=49.52 P .01 respectively). Results of Tukey's HSD procedure indicated that students under the Forkner system had significantly higher mean accuracy rates than did students under the Century 21 system. No other pairwise comparison was significant.

Shorthand Theory

Results of the analysis of variance indicated significant main effects relative to both method and ability (F=6.86; P .01 and F=38.23; P .01 respectively). Results of Tukey's HSD procedure indicated that students under either the Century 21 or Forkner system had significantly higher mean theory scores than students under the Gregg system. No other pairwise comparison was significant.

Analysis of Covariance, Vocabulary as Covariate:

Dictation Speed--60 Words Per Minute

Results of the Analysis of covariance indicated significant main effects relative to both method and ability (F=y.57; P .01 and F=7.31; P .01 respectively). Results of Tukey's HSD procedure indicated that students in the Forkner system had significantly higher mean accuracy scores than those in either the Century 21 or Gregg system.

Dictation Speed--70 Words Per Minute

Results of the analysis of covariance indicated significant main effects relative to both system and ability ($F=4.52$; $P < .01$ and $F=7.59$; $P < .01$ respectively). Results of Tukey's HSD procedure indicated that students in the Forkner system had significantly higher mean accuracy scores than students in the Gregg system.

Dictation Speed--80 Words Per Minute

Results of the analysis of covariance indicated significant main effects relative to both system and ability ($F=4.05$; $P < .01$ and $F=9.80$; $P < .01$). The interaction between system and ability was also significant ($F=3.73$; $P < .01$). Tests of simple main effects indicated that significant differences existed between the means of the high and low ability groups for only the Landmark system. Additional tests indicated that for the low ability students, the Forkner system produced significantly higher accuracy rates than the Century 21 and Landmark system. For the high ability group the Landmark system produced significantly higher mean scores than any of the other three systems.

Dictation Speed--90 Words Per Minute

Results of the analysis of covariance indicated significant main effects relative to both system and ability ($F=2.61$; $P < .05$ and $F=12.05$; $P < .01$ respectively). No pairwise comparison was significant at the .05 level. In all of the following tables, system I is Century 21 shorthand, system II is Forkner, system III is Gregg, and system IV is Landmark.

Words Per Minute

TYPE

		I	II	III	IV
LOW	$\bar{X}$	34.55	39.40	35.21	39.20
	SD	7.06	3.50	7.33	6.40
	N	29	20	41	20
HIGH	$\bar{X}$	35.47	44.80	36.00	38.31
	SD	6.59	11.67	5.67	5.34
	N	42	10	44	19
		35.09	41.20	35.62	38.76

Vocabulary

TYPE

		I	II	III	IV
LOW	$\bar{X}$	21.00	22.80	19.97	23.10
	SD	5.82	8.64	6.07	7.01
	N	29	20	41	20
HIGH	$\bar{X}$	30.95	32.90	32.79	31.68
	SD	7.20	7.18	7.68	6.99
	N	42	10	44	19
		26.88	26.15	26.61	27.28

Essentials of Englisn

Total

TYPE

		I	II	III	IV
LOW	$\bar{x}$	81.00	77.75	75.07	66.30
	SD	10.30	15.06	12.79	16.49
	N	29	20	41	20
HIGH	$\bar{x}$	101.52	100.10	102.90	102.89
	SD	8.78	7.32	6.77	7.37
	N	42	10	44	19
		93.14	85.20	89.48	84.12

Theory

TYPE

		I	II	III	IV
LOW	$\bar{X}$	57.24	62.75	51.02	46.13
	SD	16.69	10.88	17.20	21.94
	N	29	20	41	23
HIGH	$\bar{X}$	72.35	72.90	60.56	68.89
	SD	13.48	7.56	19.62	14.78
	N	42	10	44	19
		66.18	66.13	55.96	56.42

* 1 vs 3q = 3.72
* 2 vs 3q = 3.71

Theory

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	5704.01	3	1901.33	6.85**
Ability (B)	10592.52	1	10592.52	38.23**
A x B	1339.08	3	446.36	1.61
Error	60956.59	220	277.07	
Total	78576.81	227	346.15	

**P < .01

TABLE I
INTERCORRELATIONS OF ACCURACY RATES AND SUBSCALES
OF THE GATES MAC GINITIE READING TEST AND HANDWRITING SPEEDS

	60 WPM	70 WPM	80 WPM	90 WPM
Speed and Accuracy	.40	.33	.45	.38
Vocabulary	.47	.41	.43	.40
Comprehension	.44	.41	.40	.43
Handwriting Speed	.23	.31	.27	.23

Table 2

TT60

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	4974.65	3	1658.21	7.37***
Ability (B)	11025.98	1	11025.98	49.06***
A x B	305.66	3	101.88	.45
Error	48769.69	217	224.74	
Total	63305.41	224	282.61	

***P < .001

Table 3

TT60

TYPE

		I	II	III	IV
LOW	$\bar{X}$	73.89	89.55	75.63	82.20
	SD	18.25	9.20	15.42	21.91
	N	29	20	41	20
HIGH	$\bar{X}$	89.40	97.80	89.68	98.42
	SD	13.29	2.61	16.52	2.67
	N	42	10	44	19
		83.07	92.30	82.90	90.10

Pairwise Comparisons

Type 1 vs Type 2q = 4.11

Type 2 vs Type 3q = 4.09

Table 4

TT70

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	5881.40	3	1960.47	5.20**
Ability (B)	14599.80	1	14599.80	38.75**
A x B	759.48	3	253.16	.67
Error	81741.18	217	376.68	
Total	100896.50	224	450.43	

**P < .01

Table 5

TT70

TYPE

		I	II	III	IV
LOW	$\bar{X}$	59.75	76.10	61.34	67.10
	SD	25.16	20.55	17.25	18.21
	N	29	20	41	20
HIGH	$\bar{X}$	77.26	85.00	76.36	89.26
	SD	18.31	18.80	20.85	10.84
	N	42	10	44	19
		70.11	69.11	79.06	77.89

Table 6

TT80

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	5376.89	3	1792.29	4.71**
Ability (B)	18201.35	1	18201.35	47.90**
A x B	3271.89	3	1090.63	2.87*
Error	82448.87	217	379.94	
Total	107177.12	224	478.46	
a at b_1	4416.46	3	1472.15	3.87*
a at b_2	4449.87	3	1483.29	3.90*
b at a_1	6102.79	1	6102.79	16.06*
b at a_2	105.47	1	105.47	.28
b at a_3	5255.00	1	5255.00	13.83*
b at a_4	10011.88	1	10011.88	26.35*
a at b_1	1 vs 2q= 4.25*			
	2 vs 3q= 3.83*			
a at b_2	3 vs 4q= 4.22*			
	1 vs 4q= 3.87*			

*P < .01

Table 7

TT80

TYPE

		I	II	III	IV
LOW	$\bar{X}$	53.13	70.80	54.85	56.05
	SD	19.53	17.58	19.61	20.70
	N	29	20	41	20
HIGH	$\bar{X}$	72.00	74.80	70.54	88.10
	SD	19.95	17.58	22.31	12.05
	N	42	10	44	19
		64.29	71.83	62.97	71.66

TABLE 8

TT90

ANALYSIS OF VARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	3955.04	3	1318.34	3.19*
Ability (B)	20414.49	1	20414.49	49.52**
A x B	1880.00	3	626.66	1.52
Error	89456.00	217	412.24	
Total	113478.37	224	506.60	

TABLE 9
TT90

TYPE

		I	II	III	IV
LOW	$\bar{X}$	40.93	57.50	46.34	44.05
	SD	24.28	20.31	16.17	23.35
	N	29	20	41	20
HIGH	$\bar{X}$	61.04	67.20	63.09	74.05
	SD	22.35	11.45	21.13	13.74
	N	42	10	44	19
		52.83	60.73	55.01	58.66

2 vs 1q = 2.60

TT60 Adj

Vocabulary

TYPE

		I	II	III	IV
LOW	$\bar{X}$	79.23	93.21	81.92	85.59
	SD	17.34	8.75	14.60	19.26
	N	29	20	41	20
HIGH	$\bar{X}$	85.50	92.08	84.06	93.83
	SD	13.18	5.42	15.25	6.38
	N	42	10	44	19
		82.94	92.84	83.03	89.60

1 vs 2q = 4.68

2 vs 3q = 4.64

TT60

Vocabulary

ANALYSIS OF COVARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	3937.31	3	1312.43	6.57**
Ability (B)	1459.98	1	1459.98	7.31**
A x B	441.67	3	147.22	.73
Error	43136.96	216	199.70	
Total	63305.41	224	282.61	

TT70 Adj

Vocabulary

TYPE

		I	II	III	IV
LOW	$\bar{x}$	65.47	80.02	68.07	70.72
	SD	24.96	19.52	16.07	19.60
	N	29	20	41	20
HIGH	$\bar{x}$	73.08	78.88	70.35	84.35
	SD	18.08	17.16	19.22	12.27
	N	42	10	44	19
		69.97	79.64	69.25	77.36

TT70

Vocabulary

ANALYSIS OF COVARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	4784.94	3	1594.98	4.52**
Ability (B)	2679.16	1	2679.16	7.59**
A x B	1066.06	3	355.35	1.00
Error	76177.25	216	352.67	
Total	100896.50	224	450.43	

2 vs 3q = 3.69

T180 Adj

Vocabulary

TYPE

		I	II	III	IV
LOW	$\bar{x}$	59.48	74.70	62.32	60.07
	SD	20.55	14.07	19.09	20.09
	N	29	20	41	20
HIGH	$\bar{x}$	67.36	68.01	63.87	82.66
	SD	18.81	16.60	20.86	12.58
	N	42	10	44	19
		64.14	72.47	63.12	71.08

TT80

Vocabulary

ANALYSIS OF COVARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	4247.60	3	1415.86	4.05**
Ability (B)	3425.51	1	3425.51	9.80**
A x B	3916.15	3	1305.38	3.73**
Error	75444.31	216	349.27	
Total	107177.12	224	478.46	
B at a1	1063.71	1	1063.71	3.05
a2	299.25	1	299.25	.86
a3	50.75	1	50.75	.15
a4	4991.69	1	4991.69	14.29**
a at b1	3271.29	3	1090.43	3.12*
b2	4824.47	3	1608.16	4.60**

*P < .05
**P < .01

a at b1	1 vs 2q = 3.85*	2 vs 4q = 3.70*
a at b2	3 vs 4q = 4.76*	4 vs 1q = 3.87*

2 vs 4q = 3.71*

pg. 30

TT90 Adj

Vocabulary

TYPE

		I	II	III	IV
LOW	$\bar{x}$	47.26	61.85	53.80	48.07
	SD	25.44	18.24	15.90	22.95
	N	29	20	41	20
HIGH	$\bar{x}$	56.41	60.42	56.42	68.61
	SD	22.07	11.72	19.29	12.87
	N	42	10	44	19
		52.68	61.37	55.16	58.08

No pairwise significant at .05 level

TT90

Vocabulary

ANALYSIS OF COVARIANCE SUMMARY TABLE

Source	SS	df	MS	F
GP (A)	3023.65	3	1007.88	2.61*
Ability (B)	4653.81	1	4653.81	12.05**
A x B	2407.62	3	802.54	2.07
Error	83420.43	216	386.20	
Total	113478.37	224	506.60	

The following charts help to graphically illustrate, with the use of parallel lines, the relationships between the groups,

TT60

Analysis of Variance

$\bar{x}$	82.90	83.07	90.10	92.30
	III	I	IV	II

TT70

Analysis of Variance

No pairwise comparison significant

TT80

Analysis of Variance

$\bar{x}$	53.13	54.85	65.05	70.80
Low	I	III	IV	II
$\bar{x}$	70.54	72.00	74.80	88.10
High	III	I	II	IV

TT90

Analysis of Variance

$\bar{x}$	52.83	55.01	58.66	60.73
	I	III	IV	II

TT60

Analysis of Covariance

$\bar{x}$	82.94	83.03	89.60	92.84
	I	III	IV	II

TT70

Analysis of Covariance

$\bar{x}$	69.25	69.97	77.36	79.64
	III	I	IV	II

TT80

Analysis of Covariance

$\bar{x}$	59.48	60.07	62.32	74.70
Low	I	IV	III	II
$\bar{x}$	63.87	67.36	68.01	82.66
High	III	I	II	IV

TT90

Analysis of Covariance

No pairwise comparison significant

Theory

$\bar{x}$	55.95	56.42	66.13	66.18
	III	IV	II	I

TEACHER QUESTIONNAIRE

Teachers were asked to respond to a questionnaire about classroom practices to determine whether they followed the instructions given to them at the beginning of the year. The responses to the six major questions are listed below:

Questions	Century 21		Forkner		Gregg		Landmark	
	Yes	No	Yes	No	Yes	No	Yes	No
1. Did you begin writing no later than the sixth lesson?	4		4		5		3	
2. Did you introduce new matter dictation no later than the twelfth week of instruction?	3	2	2	2	5		3	
3. Did you conduct daily word drills on words presented in each lesson?	5		4		5		3	
4. Did you conduct drills on brief forms frequently?	5		3	1	5		3	
5. Did you stress the development of rapid shorthand reading ability through daily practice and homework assignments?	5		3	1	5		3	
6. Did you encourage students to work on practice material with their books closed after they had written the material one time?	5		4		4	1	3	

The full questionnaire can be seen in Appendix A-9. Teacher ability varied from class to class. However, teaching practices and methods were reasonably consistent throughout the project. Random observation on the part of the initial researcher reinforces the results obtained from the teachers' questionnaire.

SUMMARY OF FINDINGS

A summary of findings of this project indicate that for the population of this study:

1. None of the four systems used enabled the students to reach the objective of 90 words per minute for three minutes with 97 percent accuracy in any significant number.

2. At 60 words per minute, students using the Forkner system had significantly higher mean accuracy scores than those in either the Century 21 or Gregg system.

3. At 70 words per minute, students in the Forkner system had significantly higher mean accuracy scores than students in the Gregg system.

4. At 80 words per minute, low ability students using the Forkner system had significantly higher mean accuracy rates than students in the Century 21 and Landmark systems. For the high ability group the Landmark system produced significantly higher mean scores than any of the other three systems.

5. At 90 words per minute, students using the Forkner system had significantly higher mean accuracy rates than did students using the Century 21 system. No other pairwise comparison was significant.

6. On the shorthand theory test, results indicated that students using the Century 21 or Forkner system could write unrelated words in shorthand using correct theory at a significantly higher mean score than students using the Gregg system. No other pariwise comparison was significant.

CONCLUSIONS AND RECOMMENDATIONS

This research project posed four questions. The findings provide the answers to these questions.

1. Is it possible for secondary school office education students to develop an entry level shorthand skill of 90 words per minute with one year of instruction?

The answer for the students in this study was no. An insignificant number of students in any of the systems was able to take shorthand at 90 words per minute. One can speculate that one of the reasons might be the poor English language skills, as indicated on the two tests given, of the majority of students in the project. Another reason might have been the teaching methods used. Research into new methods of teaching shorthand might provide some answers. Another reason might be the length of instructional time. Rather than have two one-hour semesters for beginning shorthand, schools might consider one hour during first semester and two hours during second semester.

2. Is the current dominant system the most effective to use to obtain entry level skill in one year or are their alternatives?

Since none of the systems enabled students to obtain an entry level skill of 90 words per minute, this question cannot be answered with a straightforward yes or no. However, since at least one of the three systems enabled students to obtain significantly higher mean accuracy scores at every speed level than students using Gregg, it appears that any of the other three systems--Century 21, Forkner, or Landmark--is an acceptable alternative to the Gregg system. Forkner appears to be a better alternative than the other three systems based on the results of the analysis of the data.

3. Is there one system more effective than others for low ability students?

There is sufficient evidence to support the statement that, for the students in this study, the Forkner system allowed low ability students to perform at a higher level than did the other three systems.

4. At what speeds are students able to transcribe dictation with 97 percent accuracy in each of the four shorthand systems at the end of two semesters?

Scores listed in the table of Tests #3 and #4 on page seven provides the answer to this question. While every student in the study was tested each time (with the exception of one or two who were absent on test days), only students able to take dictation and transcribe with 97 percent accuracy were counted. The percentage of students able to pass a three minute test with 97 percent accuracy at speeds ranging from 50 to 90 words per minute was: Century 21, 47 percent; Forkner, 40 percent; Gregg, 34 percent; Landmark, 47 percent. A comparison of the three systems at each speed can be obtained by looking at the tables on page seven. No conclusions are drawn from this data since no allowance is made for the varying ability levels of the students.

Student performance in shorthand needs to be continually studied. If schools are going to continue to offer a shorthand class, ways must be found to make student time more productive so that students can obtain entry level skills in a shorter period of time. Also, teachers and administrators need to examine their students more closely to determine whether they are offering the most appropriate shorthand system to the class. The evidence from this project supports the statement that there are effective alternative systems which may meet the needs of the students in a given class more effectively than does the current dominant system.

An annotated bibliography of materials and other research studies supporting this project will be furnished upon request.

OFFICE OF THE LOS ANGELES COUNTY SUPERINTENDENT OF SCHOOLS

RICHARD M. CLOWES, *Superintendent*

SAMPLE

We have been granted approval by the California State Department of Education to conduct a special, year-long project in Shorthand. The purpose of this project is to determine if it is possible for students to develop entry-level skill in Shorthand at the end of one-year instead of the traditional two-year program.

As I am sure you are aware, there are several reliable shorthand systems available for use in today's schools. In this project we will use two alphabetic systems (Forkner and Landmark) and two symbol systems (Southwestern and Gregg). In order to facilitate the high school's use of any of the three systems other than Gregg, we will purchase enough beginning textbooks for all the beginning shorthand students. In this way, the beginning shorthand teacher will have to teach only one system. We will also provide an extensive in-service training program in each shorthand system for those teachers who will be involved in the project.

If you are looking for new options in your office education program, this is an opportunity to make some changes at no cost to your district. We would like to have twenty different high schools involved (five in each system). If you are interested, or require more information, please call me at (213) 922-6342.

I realize this is rather late notice for a project we intend to start in September. However, we did not receive approval until this week. If you are interested, it is important that you contact me immediately so that textbooks can be ordered and in-service training provided prior to the opening of school in September.

Sincerely,

Patricia Whitman, Consultant
Office and Distributive Education

PW/mmc

LOS ANGELES COUNTY EDUCATION CENTER • (213) 922-6111
9300 EAST IMPERIAL HIGHWAY • DOWNEY, CALIFORNIA 90242

PROCEDURES AND/OR METHODS TO EMPHASIZE DURING FIRST SEMESTER SHORTHAND

1) Begin writing no later than the sixth lesson.

2) Conduct daily word drills on the most commonly used words as they are presented in each lesson so that the student learns to read and write the shorthand outlines automatically.

3) Conduct drills on brief forms until students can write the correct outlines automatically.

4) Stress the development of rapid shorthand reading ability through daily practice both in class and in homework assignments. Occasionally time students as they read. By the end of the third week of instruction, students should be able to read from their shorthand plates at the minimum rate of 40 words per minute and increase steadily thereafter until they can read between 150 and 200 words per minute by the end of theory.

5) On practice dictation material, encourage students to close their books after they have written the material once. This will discourage copying from the book which is detrimental to learning if done on a consistent basis.

6) Introduce new matter dictation as soon as you feel students can profit from it but no later than the twelfth week of instruction.

7) Vary classroom activities. Do not spend longer than five or ten minutes on any one activity at any one time. Learn to move from one activity to another with no loss of time. Here is a list of activities which you might use to provide variety to classroom activities. It is by no means a complete list. If you have others you wish to add, please do so:

    a. Concerted or individual reading from the chalk board several times during the period.

    b. Concerted or individual reading from the plates in the text.

    c. Concerted or individual reading from homework.

    d. Concerted or individual reading from dictated material.

    e. Taking live dictation.

Appendix A-3

and

Appendix A-4

{"Gates-MacGinitie Reading Tests" and "Essentials of English Tests"}

were removed due to copyright.

f. Taking taped dictation (if tapes are available or if you make your own).

g. Concerted or individual reading of brief-form charts.

h. Time reading from plates.

i. Questioning theory.

j. Reviewing pretranscription skills (spelling, punctuation, grammar).

k. Daily quizzes.

l. Elicit new principles from students by sounding and writing new words.

m. Ask students to write and spell words illustrating the new principle as the words are written on the chalk board.

n. Vocabulary tests.

o. Dictation tests.

p. Pen-written or typed transcription from plates in textbook.

q. Using workbooks (if available).

r. Explaining homework assignments.

s. Supervised writing.

TEST # 1

80 WORDS PER MINUTE:

Dear Sir:

I am glad to reply to the letter in which you asked for information about Mr. John Smith. Mr. Smith began with our company a little over six years ago. We found him to be a man who took great pride in doing his job efficiently, and his friendly nature made him very popular with everyone in our firm. We were sorry that his health made him decide to leave for another area. I have no hesitation in saying that, if you intend to choose him for a position in your firm, he will fill it well. If you ever wish additional information about him, please write me again.

Yours truly,

70 WORDS PER MINUTE:

Dear Mr. Billings:

The deluxe box of tools you ordered on October 15 was shipped direct to your home by air express on October 16. It should reach you some time today. When it comes, please examine the contents to determine whether or not anything is missing from the set. If we have not heard from you in a few days, we will assume that the set is complete and will bill you according to our original contract. May I remind you at this time that the correct tax on this item was not included in the price quoted by our salesman but will be included in your bill.

Yours truly,

60 WORDS PER MINUTE:

Dear Mrs. Brown:

I am pleased to know that you wish to be enrolled in our business school. However, applications for registration have been so heavy this semester that we do not have sufficient rooms or instructors to accommodate the great demand. Therefore, it is necessary for us to refuse your enrollment until the construction of our new school is completed in January. If you wish to wait until then, we shall be happy to place your application on file.

Cordially yours,

50 WORDS PER MINUTE:

Dear Mrs. Smith:

You are quite right when you say that our old models were a little cheaper; however, none of them had the many fine features we have built into our new gas heaters. If you will let one of our men talk to you about them, I am sure that you will agree that we have never put out a better heater. The folder that I have sent with this letter will help to show you why so many customers prefer our new model.

Yours truly,

40 WORDS PER MINUTE:

Dear Mr. Price:

The head of our Credit Department told me today that we have not received your check for the filing cabinets that were sent on May 23. As you know, you agreed to pay for those cabinets by July 15; but I am afraid that you have forgotten this agreement. Will you be good enought to put your check in the mail?

Yours truly,

TEST #2

80 WORDS PER MINUTE:

Dear Miss Taylor:

Congratulations to you for being selected the accountant for your school paper next year. Judging from your letter, the committee made a good selection.

It is a job that calls for careful planning and attention to detail. Furthermore, it is a job that will give you good experience for the future. Did you know that our assistant sales manager had the same job when she was in high school?

I am enclosing with this letter our estimate for providing the paper stock for each issue you print. I regret to say that we have had to increase our prices because the paper mills have increased their prices to us to cover added costs. When you compare the prices we charged last year with the rates on our estimate for this year, you will see that the prices have increased about 15 percent.

Because paper prices continue to increase steeply, we have added a less expensive grade of paper to our line. Perhaps your committee would like to see samples.

If so, let me know.

70 WORDS PER MINUTE:

Dear Mr. Rice:

I will be the accountant for the school paper next year. I must also help plan the budget for the paper.

The accounting records for last year show that we bought all the paper for each publication from your company. We were very happy with the service you gave us and with the suggestions for improving the paper. Please give me an estimate for supplying the paper next year.

We should be able to continue to print the paper in the school printing office. Therefore, please figure on supplying the same size and quality of paper as you did last year. We will continue to publish weekly, therefore, we will need the same quantity of paper. Last year you made one shipment, but this year we should like two shipments.

If you have questions about the estimate, please call or write.

Yours truly,

60 WORDS PER MINUTE:

Dear Miss Post:

It is difficult to thank you enough for the perfect day we spent visiting your company. Please express our thanks to all who showed us such a good time.

I wish you could have heard all the nice comments as we drove home. It seems that everybody saw a job in your organization that they would like to have some day. Some liked the accounting department, others would like to work in the purchasing department, the order department or the sales department. I think I would prefer to do correspondence in the advertising department.

When it comes time to apply for jobs, I think many of us will be writing for employment forms.

Thank you again for everything.

Yours truly,

50 WORDS PER MINUTE:

Dear Miss Green:

We are happy that your business club is planning to visit our company. We hire many high school graduates who can type and take shorthand. In fact, the president of our company attended your high school years ago.

The date of December 9 appears to be the best according to our calendar. We hope that this date will fit your schedule.

The president of our company must leave for a meeting before noon. She would like to meet with the members of your club, so please plan to arrive early. We hope you will stay for a party in the company dining room.

Yours truly,

40 WORDS PER MINUTE:

Dear Miss Post:

We have a club for all business students at our high school. Each year we take a trip to an important business office in our state. We work very hard to earn enough money to take these trips.

We have heard that your company conducts tours of your offices for student clubs. We may be able to visit your company in December. We would prefer to come during the first week. Please suggest a date that would be satisfactory.

Yours truly,

TEST #3

90 WORDS PER MINUTE:

Dear Sir:

We are pleased to announce both to you and our other friends that we are now in our new building at the corner of 12th and Ocean Avenues. We have made this move so that we shall be better able to satisfy your needs. You will be pleased to hear that now we shall not only cater to the men but we shall be able to fit women and children as well. Now all of you will be able to shop at Clark's for we have provided two more floors where the women and children should be able to find clothes to suit their individual tastes. In the rear of the building we have provided space for your car so that you will have no parking problem when you visit us. If you are in this city some day soon, we should like very much to have you and your family drop in to see us even if it is only to see what we have done for the benefit of our patrons.

Yours truly,

Dear Sir:

I have not yet heard from you since my visit to your factory at the beginning of the year. Have you reached a decision as to whether or not you will be able to buy any of our special tools? I am sure you will recall during our talks you said you liked these tools very much and that, if you decided to use them, you would have us send you some. We are still waiting to hear from you. Is there anything more you would like us to tell you about these tools? If there is, you may be sure I shall be glad to visit you again or to have any of our experts come over to talk with you about it.

Yours truly,

80 WORDS PER MINUTE:

Dear Sir;

Have you received the booklet you asked us to mail to your home? As a few days have passed and we have not heard from you, we thought that maybe it has been mislaid. As I should like to be sure that you will read it, I am sending you another copy just in case the original one failed to reach you. But, if you have read your copy and have not yet mailed us your application for our policy, I am urging you to take action right now. A few days later may be too late. When you get your policy, you may look it over for seven days. If for some reason you do not like it, your remittance will be returned to you at once and in full.

Yours truly,

80 words per minute continued-

Dear Sir:

I have not heard from you since my visit to your factory at the beginning of the year. Have you reached a decision as to whether or not you will be able to buy any of our special tools? I am sure you will recall that during our talks you said you liked these tools very much and that, if you decided to use them, you would have us send you some. We are still waiting to hear from you. Is there anything more you would like us to tell you about these tools? If there is, you may be sure I shall be glad to visit you again or to have any of our experts come over to talk with you about it. I am sure you will find them to be most helpful.

Yours truly,

70 WORDS PER MINUTE:

Dear Sir:

I have been away on a big business trip. When I got back to the office this morning, I read your letter dated May 5. I am sorry you had to wait so long for a reply. In general, I think the opportunity you are offering me is a good one. But before signing any papers I do want to have a talk with you. There are several individual matters that I should like explained. Can you come in to see me? As you know, there was a fire in our hotel recently. Because of this we have been doing a good deal of repair work for several days in our dining room. The men have been working rapidly and will be finished by the end of this week if they can keep up the pace. I should like to thank you for your patience. We realize that you and the other guests have been very much put out by the noise that is being made by these workmen, and we are very sorry that we could not spare you this annoyance. We shall do all we can to give you our usual service, but we cannot give you room service for the next few days. You may be sure that we shall give you these services again after the repairs have been made.

Yours truly,

60 WORDS PER MINUTE:

Dear Sir:

Thank you for your order of May 25. Of course, I shall try to do all I can to fill it as soon as possible. I hope to get in some fine coats in a week or so. As soon as they arrive, I will let you know. On Friday I had a talk with Mr. Lee about granting you a loan. He would like you to come to our office and let us know more about your plans for expansion. We hope you will make arrangements to do so as soon as possible. I am sure that, if your plans appear worth while to him, Mr. Lee will not hesitate to advance you the necessary sum. Write to us as soon as you can telling us what day you can come in.

Yours truly,

60 words per minute continued-

Dear Sir:

We are making slow progress in putting up the new homes on the property on Grand Street. I am leaving for Chicago next Tuesday. My purpose in making this trip is to see the materials we are ordering. I will take care of the Gates Street matter upon my return from Chicago.

Yours truly,

50 WORDS PER MINUTE:

Dear Sir:

It is a pleasure to be able to write to you about the new firm for which I am now working. I have been made a member of the sales staff of the Browning Company. This company has been making clothing for businessmen for over fifty years. If you are planning to buy a suit or topcoat for the fall, you should do so during the summer months. If you buy at Browning now, you can save as much as $10 to $20 on each suit or coat you wish to take. We have many other fine bargains in shirts and socks that I am sure you would like very much to see. I know that you will be glad to learn that I am now working for this fine company. I do hope you will come in soon so that I may take care of your needs. I will see to it that you get even better service than I was able to give you before.

Yours truly,

TEST #4

60 WORDS PER MINUTE:

Dear Mr. Blue:

Have you made a study of your insurance coverage of late? If your work situation changes, you may need to change the kind and amount of insurance you carry. What are your family needs? Are there additional children who should have coverage, or are there children whose coverage should be increased? What about your business situation? Have you changed positions recently? Are you an employee of a firm, or are you an owner? The type of insurance you carry should be determined by your specific family and business requirements.

Our firm has been in the insurance business for many years. Every representative has completed a college education with special training in business. He knows each federal and state law regarding insurance coverage. He makes a careful analysis of your special needs, and he does not try to sell more insurance than you require for adequate protection. A conference with him would be very worthwhile.

Cordially yours,

70 WORDS PER MINUTE:

Dear Mr. Price:

Our firm is asking other local banks to join it in publishing a booklet about United States savings bonds. As you know, the Federal Government has published literature regarding features of these savings bonds. We think that we can give additional advice and information to aid citizens in their selection from the classes of bonds available.

So far we have had a favorable response from the First National Bank, the State National Bank, and the Second Street National Bank. They give the idea their full endorsement. When we feel that we have heard from all banks that are going to make a response, we shall be able to work out specific details of the booklet, and we'll be getting in touch with you.

In the meantime you may want to begin to think about design of the booklet cover, use of color, size of pages, and other items about which decisions will have to be made. If we have some suggestions down on paper, we can proceed more quickly to arrive at a detailed plan for the booklet that will meet with the approval of representatives of all the banks that decide to cooperate.

Cordially yours,

80 WORDS PER MINUTE:

Dear Sir:

When you have a good research staff like we have, market opportunities keep showing up all the time. Once in a while the greatest profit opportunities appear when the market is on the way down.

That is how we found the possibility in each of two stock issues described in the enclosed folders. You should study this information, and you should be prepared to buy them the next time they go up.

Stock No. 1 is one of the best available. Earnings will rise this year. Stock No. 2 is expected to be even better than it was last year. This year the company will experience an increase in dividend payments.

Detailed reports are being offered free to any person who sends in a trial subscription to our service. Your trial subscription for a month is all that is necessary for you to receive the reports. Just mail the attached form with a dollar to cover the cost of postage and handling. You will then be able to receive the reports, the complete list of best stocks to buy, and a time schedule for selling stocks purchased previously.

You are under no obligation to continue your subscription after one month. We will even return your money if you don't think this is the best dollar investment you ever made. Take advantage of this big chance to make a profit.

Very sincerely yours,

90 WORDS PER MINUTE:

Dear Miss Alexander:

When do you think you will be in a position to bring your students to visit our warehouse operation? As I mentioned at the meeting of administration officials at the International Hotel last month, we are anxious to have students from the local schools obtain their understanding of warehouse operation at first hand. While the picture may be the same as that provided in the books they study, a little different view is obtained after seeing the actual operation in a going business.

Throughout our business you will find many a graduate of your classes. They tell me that on their visits to our warehouse they were particularly interested in the inventory system, and they urge me to show your students stock control as we handle it here.

Anything we do here has passed the test of actual use in a practical situation. It is not something thought of by an individual with his feet up on a table without regard to the facts of life. Space requirements are the major point in warehouse operation.

90 words per minute continued-

I enjoyed very much our conversation about marketing in the business world of today. It brought back my university days when I was just beginning to realize the opportunities that were ahead of me or anyone else ready to work hard.

Business and industry are looking for the young person who wishes to make a contribution to the field of his choice.

Most cordially yours,

TEACHER QUESTIONNAIRE
SHORTHAND RESEARCH PROJECT

	Yes	No
1. Did you begin writing no later than the sixth lesson?	___	___
2. Did you introduce new matter dictation no later than the twelfth week of instruction?	___	___
3. Did you conduct daily word drills on words presented in each lesson?	___	___
4. Did you conduct drills on brief forms frequently?	___	___
5. Did you stress the development of rapid shorthand reading ability through daily practice and homework assignments?	___	___
6. Did you encourage students to work on practice material with their books closed after they had written the material one time?	___	___

7. Please indicate the frequency with which you used the following activities:

	Daily	Frequently	Rarely
a. Concerted or individual reading from the chalk board several times during the period.	_____	_____	_____
b. Concerted or individual reading from the plates in the text.	_____	_____	_____
c. Concerted or individual reading from homework.	_____	_____	_____
d. Concerted or individual reading from dictated material.	_____	_____	_____
e. Taking live dictation.	_____	_____	_____
f. Taking taped dictation.	_____	_____	_____
g. Concerted or individual reading of brief-form charts.	_____	_____	_____

	Daily	Frequently	Rarely
h. Time reading from plates.	____	____	____
i. Questioning theory.	____	____	____
j. Reviewing pretranscription skills (spelling, punctuation, grammar).	____	____	____
k. Daily quizzes.	____	____	____
l. Elicit new principles from students by sounding and writing new words.	____	____	____
m. Ask students to write and spell words illustrating the new principle as the words are written on the chalk board.	____	____	____
n. Vocabulary tests.	____	____	____
o. Dictation tests.	____	____	____
p. Pen-written or typed transcription from plates in textbook.	____	____	____
q. Using workbooks.	____	____	____
r. Explaining homework assignments.	____	____	____
s. Supervised writing.	____	____	____

DIRECTIONS FOR ADMINISTERING THE SHORTHAND THEORY TEST

Have the students tear two pages from their shorthand notebooks. Starting with the very top line, number from 1 to 25 down the left hand side. To the immediate right of the line down the center of the page, number from 26 to 50. Use the second sheet to number from 51 to 100.

Have the students write their name, name of their school, and the name of the shorthand they take in the upper right hand corner.

Dictate the attached list of words to the students. Dictate one word every five seconds. Pronounce each word slowly, precisely, and one time only. Tell the students before you start dictating to listen carefully because each word will be dictated only one time. Students do not have to transcribe their lists. The purpose of this test is to see if the student can write the word correctly in shorthand.

SHORTHAND THEORY TEST

1. use
2. today
3. deep
4. tone
5. they
6. garage
7. deposit
8. hope
9. need
10. judge
11. building
12. goals
13. school
14. payment
15. event
16. bills
17. box
18. consider
19. book
20. law
21. addition
22. before
23. cabinet
24. special
25. minimum
26. glad
27. finished
28. patient
29. desire
30. while
31. daily
32. heard
33. single
34. future
35. fruit
36. quick
37. increase
38. branch
39. regret
40. business
41. unless
42. enough
43. relation
44. appoint
45. always
46. whether
47. familiar
48. personal
49. carefully
50. injury
51. achieve
52. cute
53. attention
54. refuse
55. control
56. leather
57. produce
58. answer
59. curve
60. domestic
61. undertake
62. failed
63. together
64. different
65. society
66. include
67. ledgers
68. underneath
69. accumulate
70. taxes
71. compared
72. client
73. increasingly
74. request
75. quality
76. beautiful
77. priority
78. items
79. numerous
80. experience
81. possiblility
82. unit
83. preference
84. mistake
85. attitude
86. small
87. justified
88. informed
89. convenience
90. vacation
91. south
92. period
93. schedule
94. opportunity
95. trial
96. brief
97. illustrate
98. forgot
99. treasure
100. substantial